

Amendments to the Specification:

The paragraph starting at page 1, line 22, is amended and now reads as follows:

-- In this known method, a crankshaft angle region, which is identified as a segment, is assigned to a specific region of the piston movement of each cylinder. The segments are realized, for example, by markings on a transducer wheel coupled to the crankshaft. The segment time is the time in which the crankshaft passes through this angular region and is dependent, inter alia, on the energy converted in the combustion stroke. Misfires lead to an increase of the ignition-synchronously detected segment times. According to the known method, an index for the rough running of the engine is computed from the differences of segment times. Additionally, slow dynamic operations, for example, the increase of the engine rpm during a vehicle ~~acceleration~~ acceleration, are compensated by computation. A rough-running value, which is computed in this way for each ignition, is likewise compared ignition-synchronously to a predetermined threshold value. This threshold value is dependent, if required, on operating parameters such as load and rpm and exceeding this threshold value is evaluated as a misfire. --

The paragraph starting at page 5, line 21, is amended and now reads as follows:

-- In FIG. 3, the times t_s are plotted at which the angular

regions ~~is~~ are passed through because of the rotational movement of the crankshaft. Here, a misfire in a cylinder is assumed. The lack of torque associated with the misfire leads to an increase of the corresponding time span t_s . The time spans t_s thereby define already an index L_{ut} for the rough running which is, in principle, suitable for detecting misfires. --

The paragraph starting at page 5, line 28, is amended and now reads as follows:

-- Typically, one or two segments segment times per ignition are formed. In the formation of one segment time per ignition and the utilization of all markings of the transducer wheel, a segment length of 720° divided by the number of cylinders results. This leads to a segment of 180° length in a four-cylinder engine and this segment can, for example, be arranged symmetrically with respect to the ignition TDC. Up to now, fixed lengths and arrangements were used which, for example, were optimized for the detection-critical regions of low load and high rpm. At low rpms, for example, a different segment position of 126° crankshaft angle ahead of TDC up to 54° crankshaft angle after TDC would be more suitable. --

The paragraph starting at page 6, line 14, is amended and now reads as follows:

-- According to the invention, a switchover between several segments segment lengths and segment positions is dependent upon

operating points. For example, at high rpms, the segment time for a four-cylinder engine is formed from 180° KW ahead of TDC up to 72° KW after TDC (segment start 1 in FIG. 4b) and, at low rpms, from 126° KW ahead of TDC to 54° KW after TDC (segment start 2 in FIG. 4b). --

The paragraph starting at page 7, line 8, is amended and now reads as follows:

-- FIG. 5 shows a flowchart as an embodiment of the method of the invention which is cyclically called up (step "start") by a higher ranking engine control program. In step 5.1, a check is made as to whether the rpm n and the load L lie in a region $L1$. If this is answered in the affirmative then, in step 5.2, the segment time formation with the segment length 1 (see FIG. 4a) follows. Otherwise, in step 5.3, the segment time formation takes place with the segment length 2. --